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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/757,741	COLE ET AL.
	Examiner	Art Unit	
	Cheyne D. Ly	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>13 August 2007</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-72</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-72</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20071018

DETAILED ACTION

1. Applicants' arguments filed August 13, 2007 have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

2. Claims 1-72 are examined on the merits.

RESPONSE TO ARGUMENTS

3. In regard to Applicant's argument (pages 14-15) directed to the limitation of "unloading only the identified row...", Applicant's argument is not persuasive because Sockut discloses the argued limitation. For example, the below cite portion of Sockut discloses "we find...an overflow record...Unloading an overflow..." (page 11, lines 1-10). The limitation of "only" has been attributed with the customary and ordinary meaning of "being the single one or relatively few of the kind" (dictionary.com). Further, one of ordinary skill in the art at the time of the invention would have readily attributed the record of Sockut to the claimed row as supported by Ramakrishnan (page 22, last paragraph, especially, "tuples, also called records...each tuple is a row). Therefore, the disclosure cited disclosure Sockut reasonably anticipates the argued limitation. It is noted that the citation of the above secondary references has been necessitated by the claim amendment.

4. Further, the disclosure of Socket is consistent with the disclosure of the claimed invention because Applicant describes the claim method within the context of repair overflow rows

in a source table (page 1, [0008]). Further, claim 1 specifically recites the claimed

method is directed to overflow repair within a source table. Therefore, the disclosure of

Sockut reasonably describe the argued limitation.

5. In regard to the arguments directed to the 35 U.S.C. 103 rejections, Applicant's argument

is disclosure by Socku which has been deemed to be unpersuasive as discussed above.

CLAIM REJECTIONS - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-6, 14-20, 27-30, 39-48, 55-60, and 69-72 are rejected under 35 U.S.C. 102(b)**

as being anticipated by Sockut (1997).

CLAIM INTERPRETATIONS

8. Sockut discloses the described method has been implemented in the IBM's DATABASE

2 (DB2*) as described by References 13 and 14 (page 2, lines 1-6). Therefore, the

inclusion of Reference 13 Haderle et al. (Haderle hereafter) has been provided to describe

the inherent features of said DB2*.

PRIOR ART

9. In regard to claim 1, Sockut discloses an overflow row repair method, comprising:

Retrieving a page of memory associated with a source table (page 4, paragraph 7,

especially, "the table space or partition on which reorganization operates", and page 11,

lines 1-39, especially, "scanning the file pages...");

Interrogating the page of memory to identify an overflow row (page 11, lines 1-39, especially, "we find a...overflow record");

Unloading only the identified overflow row from the source table (page 11, lines 1-39, especially, "we find...an overflow record...Unloading an overflow...");

Deleting the identified overflow row from the source table (page 1, Abstract etc., and page 4, 6th paragraph, especially, "removes overflow...", and pages 9-10, Table 2); and

Loading the previously unloaded identified overflow row into the source table (page 11, lines 1-39, especially, "Reloading of data....").

10. In regard to claims 2 and 3, Sockut discloses retrieving and interrogating are repeated for each page of memory comprising the source table (pages 5-6, especially, "execute iteratively...", and page 15, Control of iterations (step 3) section).

11. In regard to claim 4, Sockut discloses the source table further comprises an index (page 3, 4th paragraph, especially, "Storage structures for indexes..."

12. In regard to claim 5, Sockut discloses the act of retrieving comprises retrieving the page of memory from a buffer pool (page 4, last paragraph, especially, "storage buffers...").

13. In regard to claim 6, Sockut discloses the act of retrieving comprising retrieving the page of memory from a direct access storage device (Haderle et al., page 112, column 2, line 9, especially, "Direct Access Storage Devices...").

14. In regard to claims 14-16, Sockut discloses the DELETE, and INSERT statements (pages 9-10, Table 2). Further, Haderle describes the executing of SELECT statement for retrieving data (page 113, column 2, lines 4-24).

15. In regard to claims 17-20, 27, 43-48, and 55-57, Sockut discloses the claimed invention
as cited above.

16. In regard to claims 28-30, 39-42, 58-60, and 69-72, Sockut discloses the claimed
invention as cited above. Further, Sockut discloses the non-source table data source
comprises a database log file (page 5 in its entirety, especially, "log entries...") and a
plurality of identified overflow rows at a time (page 13, last two paragraphs, especially,
"over flow records...").

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the
claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the
various claims was commonly owned at the time any inventions covered therein were
made absent any evidence to the contrary. Applicant is advised of the obligation under
37 CFR 1.56 to point out the inventor and invention dates of each claim that was not
commonly owned at the time a later invention was made in order for the examiner to
consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)
prior art under 35 U.S.C. 103(a).

19. **Claims 7, 21, 31, 32, 49, 61, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sockut (1997) as applied to claims 1-6, 14-20, 27-30, 39-48, 55-60, and 69-72 above.**

20. In regard to claims 7, 21, 31, 49, and 61, Sockut describes alternatives to reorganization by using page level locks and hold them until commitment to avoid the complexity (page 19, 6th paragraph). Therefore, one of ordinary skill in the art at the time of the invention have been motivated by the described alternatives to reorganization to lock the source table before deleting to avoid the complexity. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method described by Sockut by locking the source table before deleting to avoid the complexity.

21. In regard to claims 32 and 62, Sockut describes unlocking the source table after the act of reloading the identified overflow row (page 8, lines 5-11, especially, "our technique requires no lock while reloading..."). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method described by Sockut by unlocking the source table to avoid the complexity.

22. **Claims 8, 9, 11, 12, 22, 24-26, 33, 34, 37, 38, 50, 51, 53, 54, 63, 64, 67, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sockut (1997) above, and further in view of Jenkins, Jr. (US 5,899,993 A) (Jenkins hereafter).**

MOTIVATION TO COMBINE

23. Jenkins describes a "significant disadvantage of the prior art constraint enablement techniques is that inserts, updates, and deletes...If the existing body of data is large, validating a constraint may take hours...One attempt to avoid the delay...allows users to

specify constraints that are only enforced" (column 2, line 66, to column 3, line 6). While, Sockut describes an improvement to the well known in the art reorganization method which takes a longer time than the users can afford to have the database unavailable (page 1, second to the last paragraph). Therefore, one of ordinary skill in the art at the time of the invention would have been motivated Jenkins to improve the method described by Sockut to avoid delays.

PRIOR ART

24. In regard to claims 8, 22, 33, 50, and 63, Sockut describes all the limitations of said claims except for the limitation of "identifying a constraint..." and "disabling the identified constraint..." Jenkins describes "identifying a constraint..." and "disabling the identified constraint..." (column 3, lines 7-16). Therefore, it would have been obvious to one of ordinary skill in the art to use the method of Sockut with the constraints described by Jenkins to avoid delays.

25. In regard to claims 9, 24, 31, 34, 51, and 64, Sockut discloses the described method has been implemented in the IBM's DATABASE 2 (DB2*) as described by References 13 and 14 (page 2, lines 1-6). Haderle which has been cited to describe that DB2 is well known in the art to have a lock management system (Haderle, page 120, column 2, last paragraph). Further, Applicant's specification (page 3 and Figure 1) discloses that it is well known in the art that DB2 locks the source table during the reorganization. Therefore, it would have been obvious to one of ordinary skill in the art to use the method of Sockut with the constraints described by Jenkins to avoid delays.

26. In regard to claims 11, 12, 25, 26, 37, 38, 53, 54, 67, and 68, due to the vague and

indefinite issue directed to said claims, the claimed invention has been interpreted

reasonably broad for the prior art rejection. Sockut and Jenkins render the claimed

invention obvious to one of ordinary skill in the art as cited above.

27. Claims 10, 23, 36, 52, and 66 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sockut (1997) and Jenkins, Jr. (US 5,899,993 A) (Jenkins

hereafter) above in further view of Wu et al. (2005/0080979).

MOTIVATION TO COMBINE

28. Wu describes an improvement to the IBM DB2 computer database software to maximize

resource allocations (page 1, [0009] to [0011]) to reduce costly disk I/O time (page 2,

column 1, lines 5-8). Sockut discloses the described method has been implemented in the

IBM's DATABASE 2 (DB2*) as described by References 13 and 14 (page 2, lines 1-6).

Jenkins describes a "significant disadvantage of the prior art constraint enablement

techniques is that inserts, updates, and deletes...If the existing body of data is large,

validating a constraint may take hours...One attempt to avoid the delay...allows users to

specify constraints that are only enforced" (column 2, line 66, to column 3, line 6).

Therefore, one of ordinary skill in the art at the time of the invention would have been

motivated by Wu to improve the method described by Sockut and Jenkins to avoid

delays by reducing costly disk I/O time.

PRIOR ART

29. In regard to claims 10, 23, 36, 52, and 66, Sockut in view of Jenkins describes the

limitations of said claims, except for the limitation of "dropping the identified constraint"

or "deleting the identified constraint." Wu describes the limitations of "dropping the identified constraint" and "deleting the identified constraint" (page 3, [0042], especially, "to delete a constraint from the working set"). Therefore, it would have been obvious to one of ordinary skill in the art to use the method described by Sockut and Jenkins to avoid delays by reducing costly disk I/O time as described by Wu.

30. **Claims 13, 35, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sockut and Jenkins, Jr. (US 5,899,993 A) (Jenkins hereafter) above in further view of Jacobs et al. (US 6047285 A) (Jacobs hereafter).**

MOTIVATION TO COMBINE

31. Jenkins describes a "significant disadvantage of the prior art constraint enablement techniques is that inserts, updates, and deletes…If the existing body of data is large, validating a constraint may take hours…One attempt to avoid the delay…allows users to specify constraints that are only enforced" (column 2, line 66, to column 3, line 6). Sockut describes an improvement to known in the art reorganization method which takes a longer time than the users can afford to have the database unavailable (page 1, second to the last paragraph). While, Jacobs describe an improvement for resource allocations using the described improved constraints (column 6, lines 10-41). Therefore, one of ordinary skill in the art at the time of the invention would have been motivated Jenkins to improve the method of Sockut with the constraint enforcement described by Jacobs to avoid delays.

PRIOR ART

32. In regard to claims 13, 35, and 65, Sockut and Jenkins describe the limitations of said claims as described above, except for the limitation of "deferred constraint." Jacobs describes the limitation "deferred constraint" (column 7, line 50, to column 8, line 19). It is noted that Jacobs is not explicit in regard to the limitation of "the identified constraint is not locked." However, the deferred constraint of Jacobs fits the requirement for the "the identified constraint" to be not locked. Therefore, it would have been obvious to one of skill in the art to use the method described by Jenkins and Sockut with the constraint enforcement described by Jacobs to avoid delays.

CONCLUSION

33. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

34. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

35. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact

the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

36. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199. The USPTO's official fax number is 571-272-8300.

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Dune Ly, whose telephone number is (571) 272-0716. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

38. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo, can be reached on (571) 272-3642.

C. Dune Ly
Primary Examiner
10/18/07